

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An ink jet printing device with a head or with heads of parallel or serial-parallel type, ~~including~~ comprising:

a plurality of ejection modules each ~~of which with~~ having chambers ~~suitable~~ adapted for containing ink and ~~with associated relative~~ heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along a direction of printing at a constant pitch,
~~said ink jet printing device comprising:~~

ejection nozzles aligned along ~~a same~~ the direction of printing,

a support common to the modules, ~~and hydraulic tight means, and in which:~~ the support ~~comprises~~ comprising a base plate of rigid material that defines through its thickness an elongated feeding duct for the ink, wherein the feeding duct extends ~~which, in use,~~ is substantially parallel to the ~~line~~ direction of printing, and

a hydraulic seal forming a hydraulic tight connection between the ejection modules and the feeding duct,

wherein the ejection modules are mounted side by side on said support plate and with the chambers arranged in a line along the ~~same direction~~ direction of printing and in hydraulic connection with the feeding duct, ~~said hydraulic tight means achieving a hydraulic tight connection between the said modules and the feeding duct.~~

2. (Currently Amended) The device according to claim 1, wherein said hydraulic ~~tight means~~ seal comprises a lamina mounted between the modules and, through a frame, the support.

3. (Currently Amended) The device according to claim 1, further comprising wherein said
~~ejection nozzles are obtained from~~ a nozzle plate ~~constituting~~ forming a hydraulically tight, upper
closing surface for said chambers, wherein the ejection nozzles are formed in the nozzle plate and
~~are and in which said ejection nozzles are~~ in hydraulic connection with corresponding chambers of
the ejection modules.
4. (Previously Presented) The device according to claim 1 further comprising a secondary tank
in hydraulic connection with the feeding duct and integral with said plate, capable of receiving a fill
of ink.
5. (Currently Amended) The device according to claim 1, further comprising an elastic joint
filler for a removable cartridge and in which said joint allows freedom of movement between said
plate and said cartridge and has a filter function for the ink of the cartridge.
6. (Currently Amended) The device according to claim 1, wherein said feeding duct is a slot-
shaped aperture ~~extended~~ extending in the ~~longitudinal~~ direction of printing along which the
modules are disposed.
7. (Currently Amended) The device according to claim 2, wherein said chambers are in
hydraulic connection with a front of the module and in which a counterpart is provided of the same
thickness as the modules, mounted on the base plate parallel to the front of the modules, delimited

by the lamina or the nozzle plate and connected to the duct, defining a passage for the ink for said chambers.

8. (Previously Presented) The device according to claim 7, wherein said chambers are defined as notches in a polymerizable film deposited on a die of the module and in which the nozzle plate is attached by polymerization, with said film on the modules and with an adhesive on said counterpart.

9. (Currently Amended) The device according to claim 1, wherein the base plate supports electric interfacing circuits for said modules.

10. (Previously Presented) The device according to claim 3, wherein said nozzle plate supports electric interfacing circuits for said modules.

11. (Currently Amended) The device according to claim 1, ~~wherein the further comprising rows of a plurality of modules~~ are arranged in multiple rows for a plurality of inks, ~~wherein and in which~~ said rows of modules are arranged in an array on a support plate which defines feeding ducts for the chambers of the modules arranged in the multiple rows ~~of modules~~.

12. (Currently Amended) The device according to claim 1, wherein said support plate and said modules define the head ~~(21, 73)~~ or the heads of the printing device, and the printing device is adapted to and in which said head or said heads are capable move the head or the heads back-and-forth along the direction of printing of alternating motion in relations with respect to the print

medium for a serial-parallel printing with at a printing resolution greater than the physical resolution of the pitch between the nozzles.

13. (Currently Amended) A manufacturing process for producing an ink jet printing device with [[a]] heads of parallel or serial parallel type, comprising a plurality of ejection modules ~~(22)~~ each of which with having chambers ~~suitable~~ adapted for containing ink and ~~with associated relative~~ heating elements adapted for commanding ejection of the ink, the chambers spaced apart from one another along a direction of printing at a constant pitch, said process ~~comprises the steps~~ comprising:

a – providing a support common to the modules and which defines an elongated shot-shaped ~~aperture for the ink which constitutes~~ a feeding duct for the ink that extends substantially along the direction of printing;

b – providing ~~and~~ a nozzle plate in which ~~the~~ ejection nozzles are arranged substantially ~~in a line~~ along the direction of printing ~~a same direction~~;

[[b]] c – fixing the ejection modules on said support in hydraulically tight connection ~~and such that~~ with the feeding duct and with the respective edges ~~are~~ of the modules aligned and face the slot-shaped aperture; and

[[c]] d – hydraulically ~~tight fixing~~ sealing the nozzle plate on the modules and the support ~~in manner that the nozzles face on the chambers thereby~~ with the nozzle plate forming ~~the~~ an upper closing surface of the ejection chambers and of the feeding duct for the ink.

14. (Withdrawn – Currently Amended) An ink jet printing device with a head ~~(21, 73)~~ or with heads of the serial-parallel type, comprising a plurality of ejection modules, each of which with chambers suitable for containing ink and with associated relative heating elements for commanding ejection of the ink and with a cartridge of ink for the head or with a cartridge of ink for the heads, said device comprising;

the ejection modules ~~(22)~~ being mounted side by side with the chambers arranged in a line along a same direction,

said modules being capable of alternating motion in relation to the print medium for a printing resolution greater than the physical resolution of the pitch between the nozzles, and said cartridge or said cartridges of ink are connected removably to said modules through an elastic joint or elastic joints for decoupling between the modules and said cartridge.

15. (Withdrawn) An ink jet printing device with a head or view heads of the serial-parallel type, comprising a plurality of ejection modules each of which with chambers suitable for containing ink and with associated relative heating elements for commanding ejection of the ink on a print medium, and with a cartridge or with various cartridges of ink for the head or with cartridges of ink for the heads, said device comprising:

the ejection modules being mounted side by side with the chambers arranged in a line along a same direction; and

said print medium is capable of alternating motion in relation to said modules for a serial-parallel printing with printing resolution greater than the physical resolution of the pitch, and said cartridge or said cartridges of ink are hydraulically connected removably to said modules.

16. (Currently Amended) A printer comprising an ink jet device with a head or with heads of serial-parallel type, comprising:

a plurality of ejectors each ~~of which~~ having chambers ~~suitable~~ adapted for containing ink and ~~with associated relative~~ heating elements adapted for commanding ejection of the ink on a print medium, the chambers spaced apart from one another along a direction of printing at a constant pitch; ~~(26) capable of feeding motion, said printer comprising~~

~~said each head (21,73) or each of said heads comprises~~ comprising a plate which defines an elongated feeding duct for the ink, the feeding duct extending along the direction of printing; and

said ejectors ~~face on to~~ arranged on said plate ~~and~~ with the chambers arranged in a line along the ~~same~~ direction of printing, in hydraulic, tight connection with the feeding duct; ~~and~~

wherein the printer is adapted to move said plate back-and-forth along the direction of printing with respect to ~~in which between said plate and said print medium alternating motion is provided,~~ synchronous with ~~the~~ a continuous feeding motion of said print medium ~~for to provide~~ a printing resolution greater than the physical resolution of the pitch between the nozzles.

17. (Withdrawn - Currently Amended) A printer comprising an ink jet device with a head or with heads or the parallel or serial-parallel type, comprising a plurality of nozzles ~~(32)~~ and with associated relative heating elements for commanding ejection of the ink, said printer comprising:
[[:]]

said nozzles are side by side and arranged in a line along a same direction; and

in which one or more plugs are provided, capable of movement for sealing the nozzles of the head or the heads and, when printing is concluded.

18. (Withdrawn) A printer comprising an ink jet device with a head or with heads of the parallel or serial-parallel type, comprising a plurality of nozzles and with associated relative heating elements for commanding ejection of the ink, said printer comprising:

said nozzles being side by side and arranged in a line along a same direction; and

in which a bin is provided for a series of paper cards and a skimming and feeding mechanism for skimming said paper cards from the bin and bringing them to a working configuration for the said head or said heads.

19. (Withdrawn) A printer according to claim 18, wherein the skimming and feeding mechanisms for the paper cards are provided by means of skimming roller, a pair of feeding rollers, two intermediate rollers and two pairs of terminal rollers.

20. (Previously Presented) The device according to claim 3, wherein said chambers are defined by notches in a polymerizable film deposited on a die of the module and in which the nozzle plate is attached by polymerization, with said film on the modules and with an adhesive on said counterpart.